

HOSTILE DISPLAYS OF ROSE-BREASTED GROSBEAKS TOWARDS A RED SQUIRREL

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ON 25 June 1961 at 1150 (DST), I heard the harsh screaming of Rose-breasted Grosbeaks (*Pheucticus ludovicianus*) in a grove adjacent to my home in Wayland, Middlesex County, Massachusetts. After some searching I saw a Red Squirrel (*Tamiasciurus hudsonicus*) running down one of the upper limbs of a tall elm. It was carrying in its mouth a large but still downy nestling.

When the squirrel stopped on an exposed branch to eat the nestling, I was able to see a male grosbeak posturing about the squirrel at a distance of from 1 to 3 feet (Fig. 1d). In moving about the squirrel, the male sidled stiffly up and down the branches and flew from branch to branch with a fluttery flight. This display was accompanied by loud "chinks" which sounded like the normal call note, but were given much more frequently. The intensity of the male's display gradually lessened as the squirrel remained quiet while feeding, although it seemed to keep the squirrel in sight. The male postured again but with less intensity when the squirrel stopped eating at 1225 and moved higher into the tree.

At this time I first saw the female grosbeak, which seemed to be completely unresponsive to the squirrel's presence despite the posturing and calling of the male. Both squirrel and grosbeaks were lost to sight in the foliage of the upper branches at 1230.

At 1310 the grosbeaks started screaming again. As before, they were not easily located in the thick foliage and it took several minutes for me to find the female, which was posturing strongly (see Fig. 1b and beyond). She soon flew with a flutter flight to another branch; on landing her wings were held outspread briefly (Fig. 1c). She then closed her wings and hopped out of sight. Loud chinking was heard, both preceding and following this brief view, but it subsided relatively quickly.

I was again attracted by screaming grosbeaks at 1530 and once more could find only the female. She was observed by Andrew J. Meyerriecks (who joined me at 1500) and myself to not only posture (as above and Fig. 1b) but to spread her wings to their full extent and wave them back and forth slowly (Fig. 1a). This display lasted for less than a minute and ended when the bird flew higher into the tree. In these last two encounters, the presence of the squirrel was presumed.

Meyerriecks and I later saw what we believed to be the nest of this pair of grosbeaks. It was about 45 feet from the ground on one of the upper branches of the same elm where the displays were observed; when we found it at 1600, it appeared empty (we could see through the bottom of the nest).



FIG. 1. Displays of Rose-breasted Grosbeaks directed at a nest-robbing Red Squirrel (see text for details).

FEATHER POSTURES OF DISPLAYING BIRDS

Since all of this activity took place in the foliage between 30 and 40 feet overhead, I was not able to note every detail of the behavior or the feather postures of the displaying birds through my 7×50 binoculars. Since I can find only one reference to Rose-breasted Grosbeak display (Ivor, 1944), it seems advisable to present these observations in some detail.

Male—Upright threat (Fig. 1d).—The head was held high with the bill pointed up at about a 45° angle. The feathers of the head, neck, upper back, sides, and belly were not conspicuously fluffed and may even have been sleeked. On several occasions, I was able to detect a raising and lowering of the red feathers of the breast patch, a “flashing” movement which was apparently independent of the adjacent nonred feathers. This movement was first detected by the distinct deepening of the red color of the patch when the feathers were raised. The feathers of the lower back, rump, and upper tail coverts were

ruffled and the wings stiffly drooped. The tail was pointed down and sporadically fanned.

Female—Upright threat.—This was similar to that of the male. The bill pointed upwards, tail depressed (no fanning noted), and the wings drooped stiffly. Also, as with the male, the feathers of the head and upper body were not fluffed and the feathers of the lower back and rump were ruffled. *Wing-waving.*—In this display, the body was nearly horizontal with the head thrust forward and the bill open. The body feathers were fluffed and the tail spread (but not depressed). The wings were fully spread and tilted so that the underside was visible from the front, and the wings were waved slowly back and forth (Fig. 1a).

The brevity of these observations precludes lengthy speculation on their significance; however, their uniqueness warrants tentative interpretation.

DISCUSSION

The postures adopted by a threatening animal are generally considered by ethologists to be the result of the arousal of two incompatible tendencies: to attack and to escape; the intensity of the display seemingly controlled by the degree of conflict between these two tendencies (Simmons, 1952; Morris, 1956; Hinde and Tinbergen, 1958). Such agonistic displays are usually associated with courtship, but may also occur during alarm, violation of individual distance, or territorial encounters (Ficken and Ficken, 1962). The actions of the grosbeaks in the displays described above clearly demonstrate the ambivalence of their attack-escape response to the squirrel: half-sleeked-half-ruffled plumage, flutter flights, stiff-legged sidling, wing-waving, movements toward and away from the squirrel, etc. The flashing of the red breast patch by the male and the yellow underwing linings by the female were such a conspicuous part of the displays that one is tempted to assign them a "flash signal" function, but this may have been more apparent than real.

On the whole, it seems reasonable to assume that these displays were generally associated with alarm and released by the nest-robbing activity of the squirrel. But whether they were direct threat, demonstration, or distraction displays cannot be determined until more detailed information on Rose-breast behavior becomes available.

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NEW LIFE MEMBER

Mr. William H. Pugh of Racine, Wisconsin is a new Life Member of the Wilson Ornithological Society. His principal ornithological interests are concerned with grouse and cranes, as well as raising birds in aviaries. He is a member of the Wisconsin Society for Ornithology, National Wildlife Federation, American Pheasant and Waterfowl Society (currently a director), and the Society of Tympanuchus Cupido Pinnatus. Mr. Pugh is married and has three teen-age children. He is president of the W. H. Pugh Coal Company and the W. H. Pugh Oil Company.

